

WHAT IS CLAIMED IS:

1. A data communication method in a data communication system in which a controller and a controlled device controlled by the controller perform data communication via a communication channel, comprising the steps of:
- 5 storing driver software of a plurality of types in a first storage area of the controlled device;
- judging whether driver software suitable for the controller has been stored in the first storage area of
- 10 the controlled device;
- reading driver software suitable for the controller out of the first storage area in response to a judgement to the effect that driver software suitable for the controller has been stored in the first storage area;
- 15 transmitting data, which represents the driver software that has been read out, from the controlled device to the controller; and
- storing the transmitted data representing driver software in a prescribed second storage area of the
- 20 controller.
2. A method of controlling storage of driver software in a controller constituting a data communication system in which the controller and a controlled device controlled by the controller perform data communication
- 25 via a communication channel, comprising the steps of:
- judging whether driver software suitable for the controller has been stored in a first storage area of the controlled device;

09883938 062001

reading driver software suitable for the controller out of the first storage area in response to a judgement to the effect that the driver software has been stored in the first storage area;

5 transmitting data, which represents the driver software that has been read out, from the controlled device to the controller; and

10 storing the transmitted data representing driver software in a prescribed second storage area of the controller.

3. The method according to claim 2, further comprising the steps of:

judging whether driver software suitable for the controller has not been stored in the controller; and

15 judging, in response to a judgement to the effect that the driver software has not been stored in the controller, whether driver software suitable for the controller has been stored in the first storage area of the controlled device.

20 4. The method according to claim 2, wherein in response to a judgement to the effect that driver software suitable for the controller has not been stored in the first storage area of the controlled device, information relating to this judgement is communicated.

25 5. The method according to claim 2, wherein the communication channel is a cable in accordance with IEEE 1394, and the data representing the driver software is transmitted in accordance with IEEE 1394.

0988938.062001

6. The method according to claim 2, wherein the controlled device is a digital video camera or a printer.

7. A method of reading out driver software in a
5 controlled device constituting a data communication system in which a controller and the controlled device controlled by the controller perform data communication via a communication channel, the controlled device being provided with a memory, said method comprising the steps
10 of:

storing driver software of a plurality of types in a storage area of the memory so as to be capable of being read out under the control of the controller; and

reading out desired driver software based upon
15 control performed by said controller.

8. The method according to claim 7, wherein the driver software is stored in the storage area of the memory so as to be rewritable.

9. The method according to claim 7, wherein an address
20 of driver software that has been stored in the storage area of the memory and information relating to the controller capable of performing control using this driver software are stored so as to be capable of being read out.

25 10. The method according to claim 7, wherein the controlled device is a digital video camera or a printer.

11. A data communication system in which a controller

09883938.062004

5 of types, and the controller comprises:

a judgement device for judging whether driver software suitable for the controller has been stored in a prescribed first storage area of said first memory provided in said controlled device;

15 controller has been stored in the first storage area;

20 a storage control device for receiving the data
representing the driver software transmitted by said
transmission control device, and storing this data in a
second storage area of said second memory.

12. A controller of a controlled device, the controller
25 constituting a data communication system in which the
controller and the controlled device controlled by the
controller perform data communication via a
communication channel, comprising:

a memory for storing driver software;

a first judgement device for judging whether driver software suitable for the controller has been stored in a prescribed first storage area of the controlled device;

a readout control device, responsive to a judgement by said first judgement device to the effect that driver software suitable for the controller has been stored in the first storage area, for reading the driver software out of the first storage area; and

a storage control device for storing, in a prescribed second storage area of said memory, data representing the driver software transmitted from the controlled device based upon transmission control by said transmission control device.

13. The controller according to claim 12, further comprising second judgement device for judging whether driver software suitable for the controller has not been stored in the second storage area of said memory;

said first judgement device responding to a judgement by said second judgement device to the effect that the driver software has not been stored in the second storage area by judging whether driver software suitable for the controller has been stored in the first storage area of the controlled device.

14. The controller according to claim 12, further comprising a notification device, responsive to a judgement to the effect that driver software suitable

09883938-062001

for the controller has not been stored in the first storage area of the controlled device, for communicating information relating to this judgement.

15. The controller according to claim 12, wherein the
5 communication channel is a cable in accordance with IEEE 1394, and the data representing the driver software is transmitted in accordance with IEEE 1394.

16. The controller according to claim 13, wherein the
10 controlled device is a digital video camera or a printer.

17. A controlled device constituting a data
communication system in which a controller and the
controlled device controlled by the controller perform
data communication via a communication channel, said
15 controlled device having a memory in which driver software is capable of being stored in a storage area, wherein driver software of a plurality of types is stored in the storage area of said memory so as to be capable of being read out based upon control by said
20 controller.

18. The device according to claim 17, wherein the driver software is stored in the storage area of said first memory so as to be rewritable.

19. The device according to claim 17, wherein an
25 address of driver software that has been stored in the storage area of said memory and information relating to the controller capable of performing control using this driver software are stored so as to be capable of being

09883938-062001

read out.

20. A digital video camera constituting a data communication system in which a camera controller and the digital video camera controlled by the camera controller perform data communication via a communication channel, said digital video camera having a memory in which driver software is capable of being stored in a storage area, wherein driver software of a plurality of types is stored in the storage area of said memory so as to be capable of being read out based upon control by said camera controller.

21. A printer constituting a data communication system in which a printer controller and the printer controlled by the printer controller perform data communication via a communication channel, said printer having a memory in which driver software is capable of being stored in a storage area, wherein driver software of a plurality of types is stored in the storage area of said memory so as to be capable of being read out based upon control by said printer controller.

22. A data communication system in which a controller and a controlled device controlled by the controller perform data communication via a communication channel, wherein the controlled device is provided with a first memory capable of storing driver software of a plurality of types, and the controller comprises:

a second memory for storing driver software;

judgement means for judging whether driver software

09883938.062001

suitable for the controller has been stored in a prescribed first storage area of said first memory provided in said controlled device;

5 readout control means for reading driver software suitable for the controller out of the first storage area in response to a judgement by said judgement means to the effect that driver software suitable for the controller has been stored in the first storage area;

10 transmission control means for transmitting data, which represents the driver software that has been read out by said readout control means, from the controlled device to the controller; and

15 storage control means for receiving the data representing the driver software transmitted by said transmission control means, and storing this data in a second storage area of said second memory.

23. A controller of a controlled device, the controller constituting a data communication system in which the controller and the controlled device controlled by the
20 controller perform data communication via a communication channel, comprising:

a memory for storing driver software;

25 first judgement means for judging whether driver software suitable for the controller has been stored in a prescribed first storage area of the controlled device;

readout control means, responsive to a judgement by said first judgement means to the effect that driver

09883938-062001

software suitable for the controller has been stored in the first storage area, for reading the driver software out of the first storage area; and

storage control means for storing, in a prescribed
5 second storage area of said memory, data representing the driver software transmitted from the controlled device based upon transmission control by said transmission control means.

24. A controlled device constituting a data
10 communication system in which a controller and the controlled device controlled by the controller perform data communication via a communication channel, said controlled device having a memory in which driver software is capable of being stored in a storage area,
15 wherein driver software of a plurality of types is stored in the storage area of said memory so as to be capable of being read out based upon control by said controller.

25. A charging apparatus capable of being connected to
20 a communication apparatus, which is capable of performing data communication via a communication channel, using said communication channel to make the connection;

wherein said communication channel includes a
25 communication line for data communication and a power supply line for supplying electric power;

said apparatus comprising a charging circuit for charging a battery by being supplied with electric power

09883938-062001

through said power supply line.

26. The apparatus according to claim 25, further comprising:

charging capability a judgement device for judging,
5 based upon power supplying capability of said communication apparatus, whether charging by said charging circuit is possible or not; and

a charging controller for controlling said charging circuit so as to charge the battery in response to a
10 judgement by said charging capability the judgement device to the effect that charging is possible.

27. The apparatus according to claim 25, further comprising:

a power-drop judgement device for judging, based
15 upon level of electric power supplied from said power supply line, whether a drop in power in said power supply line has occurred owing to charging of the battery by said charging circuit; and

a charging-quantity adjustment device for adjusting
20 said charging circuit, so as to reduce amount of charging, in response to a judgement by said power-drop judgement device to the effect that the drop in power will occur.

28. The apparatus according to claim 25, further
25 comprising a charging data transmitting device for transmitting data, which relates to charging in said charging circuit, to the communication apparatus connected by said communication channel.

09883938.062001

29. A charging apparatus capable of being connected to a communication apparatus, which is capable of performing data communication via a communication channel, using said communication channel to make the connection;

wherein said communication channel includes a communication line for data communication and a power supply line for supplying electric power;

said apparatus having a charging circuit for applying electric power, with which it is supplied through said power supply line, to a connector of a data processing unit driven by an installed battery, the data processing unit being formed to have said connector in order to input electric power for charging the battery.

30. A method of charging a battery comprising the steps of:

connecting a charging apparatus, which includes a charging circuit, to a communication apparatus capable of performing data communication via a communication channel that includes a communication line for data communication and a power supply line for supplying electric power, the connection being made using said communication channel; and

charging a battery by supplying electric power to said charging circuit through said power supply line.

31. The method according to claim 30, further comprising the steps of:

judging, based upon power supplying capability of

Sub
a9

09883938-062001

charging the battery in response to a judgement to the effect that charging is possible.

judging, based upon level of electric power supplied from said power supply line, whether a drop in power in said power supply line has occurred; and

33. The method according to claim 30, further comprising a step of transmitting data, which relates to charging in said charging circuit, to the communication apparatus connected by said communication channel.

Sub ad

25 said method including applying electric power,
which is supplied through said power supply line, to a
connector of a data processing unit driven by an
installed battery, the data processing unit being formed

Sub
a8

to have said connector in order to input electric power
for charging the battery, said battery being charged by
the electric power applied.

Add B2

09003938-062001